

Advanced Modelling & Evaluation: Studio RM, Advanced Estimation & Supervisor

# STUDIO RM



**Release  
Notes**

**Studio RM 2.2**

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The product described in this documentation may be connected to, and/or communicate information and data via, a network interface, which should be connected to a secure network. It is your sole responsibility to ensure a secure connection to the network and to establish and maintain appropriate measures (such as but not limited to the installation of firewalls, application of authentication measures, encryption of data, installation of antivirus programs, etc.) to protect the product, the network, your systems, and the interface against any kind of security breach, unauthorised access, interference, intrusion, leakage, damage, or corruption or theft of data. We are not liable for damages or losses related to any such security breach, unauthorised access, interference, intrusion, leakage, damage, or corruption or theft of data.



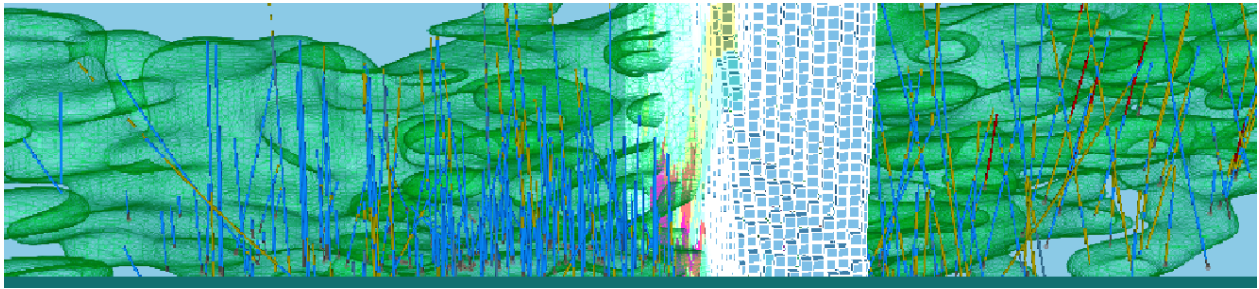
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# Overview



**Studio RM** is the world's leading integrated software package for the natural resource industries. Typical uses are in data capture and analysis, exploration, geology, geochemistry, rock mechanics and orebody modelling. It has been chosen for commodities as diverse as iron ore, gold, nickel, phosphates, diamonds, copper, bauxite, coal, lignite, platinum, petroleum, and industrial minerals.

Studio RM is one of several products in the Studio product family, which includes:



**Studio EM** for exploration data analysis and modeling.



**Studio Geo** for structural modeling.



**Studio Mapper** for geological face mapping and reporting.



**Studio NPVS** for strategic open pit optimization, design and scheduling.



**Studio NPVS+** for strategic open pit optimization, design and enhanced scheduling.



**Studio OP** for open pit design and operational scheduling.



**Studio PM** for very short term open pit operational planning.



**Studio RM** for mine geology, reserve modeling and resource estimation.



**Studio Survey** for open pit and underground mine surveying and reporting.



**Studio UG** for underground mine design and scheduling.

## Further Information

Release notes for other versions of Studio RM are available via the Datamine Customer Support website. For more details, see <https://www.dataminesoftware.com/support/>.

For the complete Studio RM documentation, see <https://docs.dataminesoftware.com/StudioRM>.

# Studio RM 2.2 Release Notes

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## Key Improvements

### Advanced Estimation Unfolding

Where orebodies need to be unfolded to reduce structural complexity prior to estimation, you can now use the Advanced Estimation wizard's new **Unfolding** screen to define the parameters and strings required to unfold sample data.

Import an existing *Unfolding parameters file* generated by the **Unfold Wizard** and apply the imported settings. You can also edit settings such as which strings are used for unfolding, the plane of structural interpretations and how section tag strings are treated, if they exist.

Once configured, unfolding becomes an integrated part of the estimation workflow. To support this feature, **COKRIG** has been updated to allow an Unfolding Parameters and Strings file to be specified, allowing estimation macros to be enhanced with an unfolding step as well.

We've also given the **Unfold Wizard** an overhaul to remove unnecessary restrictions when defining section strings (they can now be defined between any concurrent sections and not necessarily across all sections) plus other fixes and minor improvements.

### Drillhole Importer Improvements

This update introduces the following improvements to our drillhole importation console:

- Automatically validate the adherence of collar positions to a specified surface topography file, reporting errors above a specified distance threshold.
- Re-import all drillhole component tables to absorb the latest source file changes using a new **Re-import** button on the **Import** tab.
- Right-click a file to see a preview of the data table in the **Tables** window.
- Automatically generate and choose the display legend for drillholes.
- Use existing loaded drillhole component data to build or rebuild drillholes.

- **Reapply Previous Fixes:** Previously committed drillhole data fixes can now be reapplied automatically when revalidating as part of the Drillhole Importer process, saving time when new sample data comes to light.
- New 'quick fix' options handle misaligned collar EOH and interval length values.
- Automatically detect Leapfrog system field names, saving time when setting up an import scenario.
- Keyboard navigations shortcuts (SHIFT+Tab, SHIFT+Enter) have been added to Drillhole Importer table grids.
- Include or exclude multiple fields at once using new context menu options.
- You can now apply a quick fix to multiple selected validation results.
- Delete custom data sources using the data sources list.
- Import data as a background task after launching and highlight missing data sources.

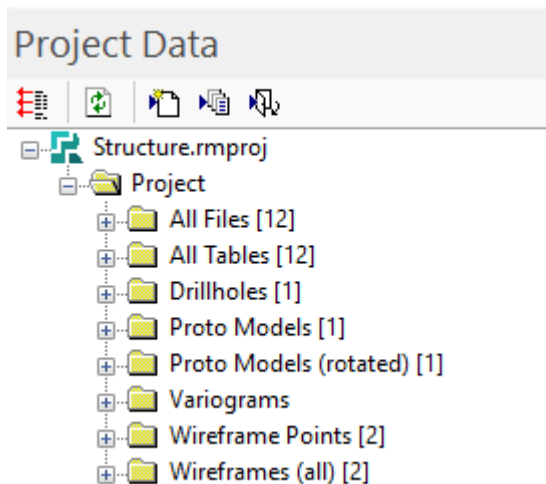
## Implicit Modelling Improvements

- Editing samples is now quicker and easier using one-click editing modes.
- Changes in vein modelling calculations have been performed to improve the performance and resilience of results.
- Set custom section definitions for each value in a vein modelling or contact surface batch run.
- Control how collar and EOH points are considered during **vein modelling**, allowing the surface to pass above the hanging wall and below the foot wall if required.
- If a vein model could not fully encompass all available positive samples, or all parts of all samples, drillhole IDs that could not be accommodated are listed.
- Visual formatting in the vein modelling function has been improved to make it clearer which intervals are considered in modelling, in relation to task settings.
- When generating a contact surface, snap and gap settings are reflected more obviously in the primary 3D window.
- When editing samples in the **Contact Surfaces** and **Vein from Samples** tasks, you can undo and redo actions.
- Pick your own HW and FW point colours!

## ANISOANG ZONE Key Field

**ANISOANG**'s ZONE parameter is now a key field to allow records to be matched between VMODEL or SEARCH and the specified input wireframe. This makes it easier to batch process runs.

## Project Data Bar



In a first step towards a unified data control bar in Studio RM, this version introduces the **Project Data Bar**.

In this phase, it's an extension of the legacy Project Files control bar, with more detailed data segregation into folders relevant to resource modelling, such as unrotated and rotated model prototype areas, geostatistical parameter files and more. Data created from implicit modelling commands are recognised so you can quickly navigate to project data relating to surface, vein, fault, categorical and grade modelling, for example, removing the need to find a wireframe of interest in a generic 'wireframes' folder.

The **Project Data Bar** is shown or hidden using the **Home** ribbon's **Show** menu. Watch this space for enhancements to this control bar in the near future!

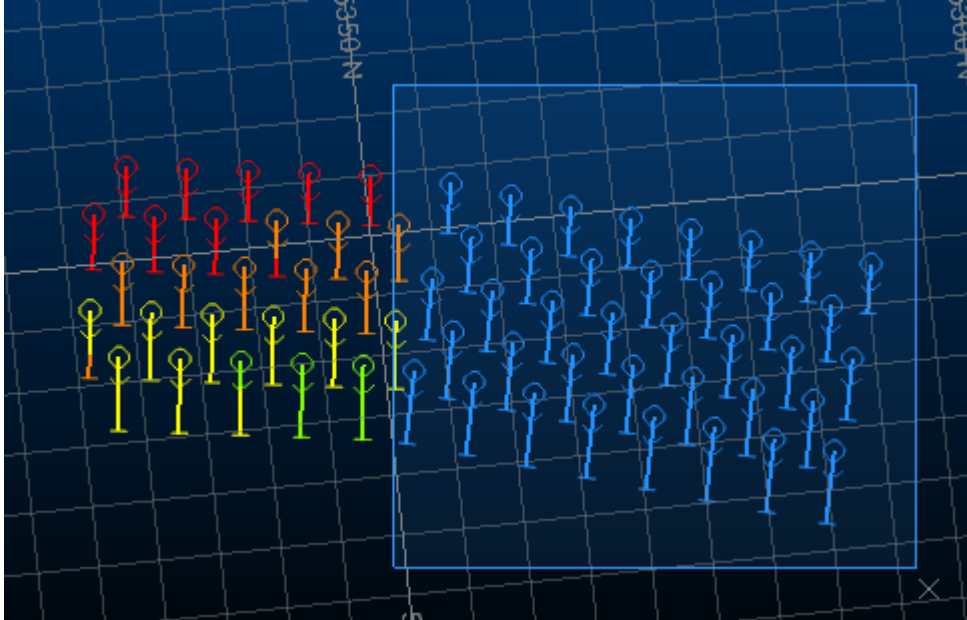
See [Project Data Control Bar](#).

## Custom Coordinate Transformations

Define custom coordinate transformations using the **transform-coordinates** command.

Define one or more control points in 3D space and automatically calculate the transformation between source and target systems. The resulting transformation matrix can be saved and shared with others.

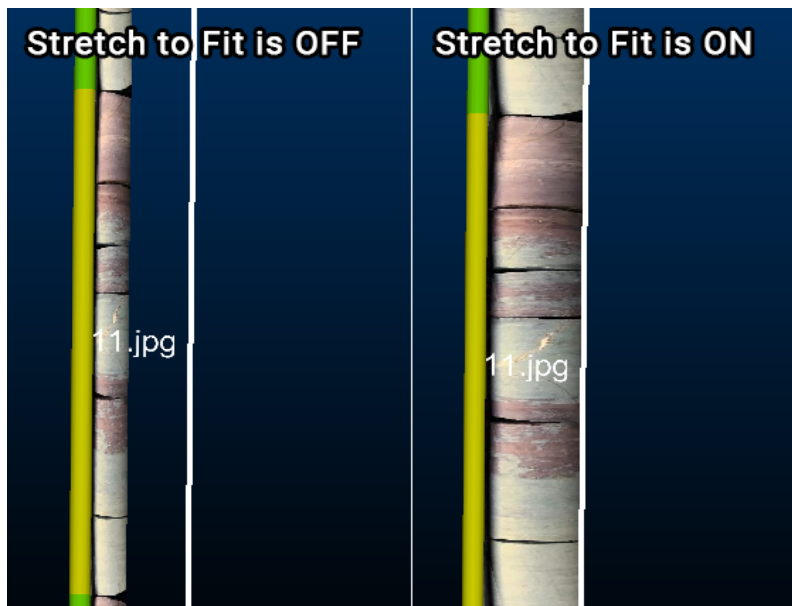
## Custom Highlight Colour



Change the 3D window selection colour to whatever you like, using the new **Options >> 3D >> General >> Selection** options.



## Rotate and Scale Downhole Column Images



If displaying downhole column images, you can now scale and rotate image data in both 3D and Log views. You can even set per-image rotations by appending this information within the image database.

## Drillholes as Points

A new option has been added to the 3D **Drillhole Properties** screen to allow drillhole samples to be rendered as points. Choose the position of the symbol and set its style, including 2D and 3D options.

## Attributes by Selection Order

It can be useful to define a series of numeric attributes in increasing order along a particular path. For example, assigning a stope index to wireframe volumes along the direction of development, assigning a blasthole row ID throughout a blast pattern and so on. A sequential index can also be useful to create spatial indices that can be used for dependency creation, control / guide schedule sequencing, mapping different areas of the reserve or mine and many other uses.

An excellent new command - **assign-attributes-by-selection-order** lets you do just that; attribute loaded wireframe, drillhole or string data based on the order you select data in a 3D window or how loaded data interacts with a projected string.

## MineScape Stratmodel Importer

A **MineScape Block Model Generator** utility can be accessed with a new `minescape-to-blockmodel` command.

Select one or more input Stratmodels in .csv format and select the ones you want to become a compound block model in your application. You can set sub celling and attribute weighting parameters.

## EXTRA Improvements

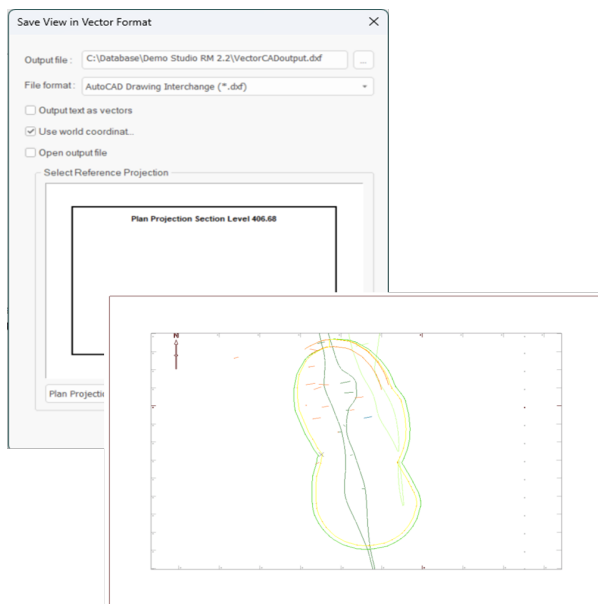
**EXTRA** is a popular expression translator tool, now in its 27th year!

In this release, we've extended **EXTRA** and made existing functions easier to access and more consistent with global standards. For example, there's a new arctangent function (`atan2`), an azimuth calculator (`azimuth(dx,dy)`), NOT expression support, simple row number field addition, random number generators and field type detection.

There are improvements elsewhere, such as improved handling of missing fields, new ways to work with IJK values in block models. Inequality definition using "`<>`" and implicit field creation.

New procedures are here; `exit()` for immediate process termination (pre-data-recording) and `keep()` to name specific fields (cumulatively if required) to retain in data output. It's a useful partner function to `saveonly()`, which requires all output fields to be specified.

## Vector Export Improvements

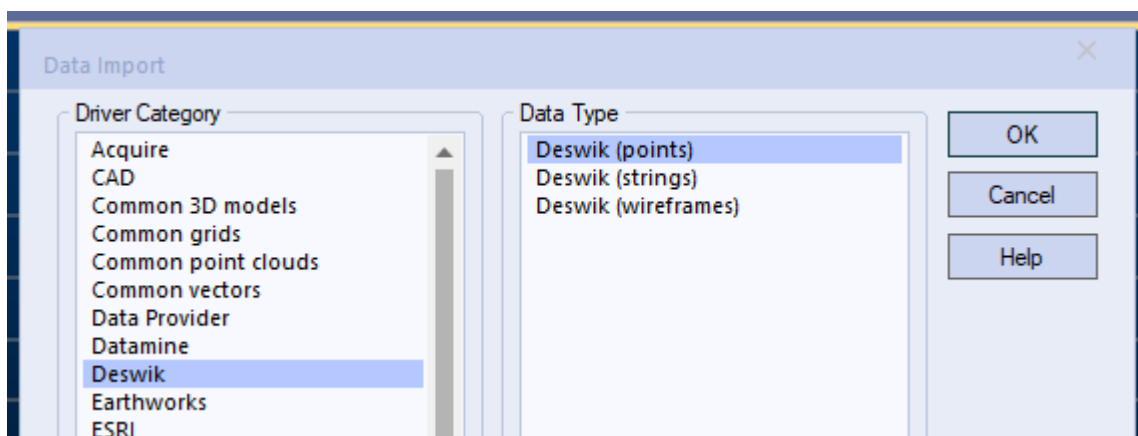


Exporting Plots window data to CAD formats has been completely overhauled to provide support for a wider range of data configurations and to improve accuracy for all exported data types.

Data can be exported as AutoCAD Drawing (.dwg) or AutoCAD Drawing Interchange Binary (.dxf) formats.

The latest changes also remove the need for plot projections to be axis-aligned before exportation, so they can now be exported in any orientation. Several other limitations of the previous export engine have been resolved as a result of this work, including export of labels to a dedicated layer, as outlined in the release notes further below.

## Import & Export Deswik Data



You can now import data in Deswik's unified format (points, strings or wireframes) using a brand new data driver, accessible using the various file load and import routines available on the **Data** ribbon. You can also export any loaded data as either points, strings or wireframes in the same .duf format.

## 1-Click Wireframe Triangles

Creating new wireframe triangles is now much quicker with an optional 1-click approach for data with shared edges. Digitize the first triangle and, optionally, click another point to generate a new triangle formed from that point and the two previously-digitized points. This makes build up a chain or patch of interconnected triangles much quicker.

## New Commands & Improvements

- A new process - **ALPHCODE** - converts between numeric and alphanumeric field values.
- The **BOOLEAN** process now supports a **@USENORM** parameter to determine if wireframe triangle normals are used to determine the inside/outside of input data.
- A new command - **create-planar-rectangle** - lets you define a rectangle by height, width, azimuth and anchor point, then position it in a 3D window interactively.
- You can now right-click a visible 3D object to set it as the **current object**.
- **ELLIPSE** now supports a **ZONE** field to allow multiple ellipsoids to be generated simultaneously.
- The **extrude-strings** command now lets you define a field for existing azimuth and dip extrusion values.
- A new process - **RANDOM** - generates random numbers, superseding the legacy MONACO process.
- A new command - **simplify-string** - provides an alternative string conditioning approach to condition-string. You can access it using the **Digitize** ribbon.
- A new process - **TRANSCO** - transforms data coordinates in physical files between Well Known Transformation (WKT) codes.



## Enhanced License Tracking

License Manager's user logging facility has been extended to include the status of all licenses on the target system (locked, unlocked, checked in or checked out) at the start of each logging session. Previously, only licensing events were recorded. This means you can now view the starting snapshot of all licenses on the server before logging continues.

# All Improvements

## Commands & Processes

- **Case: STUDIO-7135** The **Unfold Wizard's Unfold** screen now automatically detects and specifies known coordinate field names in the sample file.
- **Case: STUDIO-7129** You can now unfold data as part of an advanced estimation run via the new Unfolding screen and additional parameter support in COKRIG.
- **Case: STUDIO-7122 COKRIG** has been extended to provide support for an unfolding parameters file (UNFOLD) and a strings file (STRING).
- **Case: STUDIO-7076** If a vein surface can't be created as all positive samples either rise to the collar or fall to the EOH and position snapping is not used, an explanatory message now appears in the report.
- **Case: STUDIO-7052** Set custom section definitions for each value in a contact surface batch run.
- **Case: STUDIO-7051** Set custom section definitions for each value in a vein modelling batch run.
- **Case: STUDIO-7035** Changes in vein modelling calculations have been performed to improve the performance and resilience of results.
- **Case: STUDIO-6995** Opening Supervisor from Studio RM now always opens the latest available version.
- **Case: STUDIO-6994** You are now warned when a subcell model with different @SANGLE1,2,3 or @VANGLE1,2,3 values per IJK is used for parent cell grade estimation with Dynamic Anisotropy.
- **Case: STUDIO-6924 ANISOANG** now features a \*ZONE key field for matching records between VMODEL or SEARCH and the input wireframe.
- **Case: STUDIO-6886** When generating a contact surface, snap and gap settings are now reflected more obviously in the primary 3D window.
- **Case: STUDIO-6879** If a vein model could not fully encompass all available positive samples, or all parts of all samples. In this situation all drillhole IDs that could not be accommodated are listed.
- **Case: STUDIO-6874** When editing samples in the **Contact Surfaces** task, you can now undo and redo actions.
- **Case: STUDIO-6873** When editing samples in the **Create Vein Surfaces** task, you can now undo and redo actions.

- **Case: STUDIO-6816 ANISOANG** results for horizontal and semi-horizontal surfaces have been improved.
- **Case: STUDIO-6570 COKRIG** (and the Advanced Estimation console) now provide support for handling negative kriging weights (**KRIGNEGW**).
- **Case: STUDIO-6525** You now have control over how collar and EOH points are considered during **vein modelling**.
- **Case: STUDIO-6523** A new **Project Data Control bar** has been added to Studio RM. Consult these release notes and your help file for more details.
- **Case: STUDIO-6011** Editing samples is now quicker and easier using new one-click editing modes.
- **Case: STUDIO-5492** When modelling veins, you can pick your own HW and FW point colours.
- **Case: STUDIO-5393** Visual formatting in the vein modelling function has been improved to make it clearer which intervals are considered in modelling, in relation to task settings.
- **Case: STUDIO-5117** Editing samples for vein modelling is now quicker with a large dataset.
- **Case: STUDIO-4399** When unfolding data, between-section tags can now be set for any concurrent sections. It is no longer necessary to define sections tags between all sections.
- **Case: GEO-320** You can now automatically generate and choose the display legend for drillholes created with Drillhole Importer.
- **Cases:Multiple** The **EXTRA** process has been extended with new features, procedures and other improvements.
- **Case: CORE-8681** If a maximum file or field length is exceeded in a process, the output report now specifies the maximum amount breached.
- **Case: CORE-8515 ELLIPSE** now supports an input CENTRE file containing coordinates for positioning multiple ellipsoid output.
- **Case: CORE-8514 ANISOANG** process feedback has been improved.
- **Case: CORE-8447 DAELLIPS** now features a **ZONE** field that allows for multiple zones to be processed.
- **Case: CORE-8441 ELLIPSE** now supports a **ZONE** field to allow multiple ellipsoids to be generated simultaneously.
- **Case: CORE-8411** When saving objects, files are no longer unnecessarily converted to lower case, invalid characters and spaces are now replaced with underscores.

- **Case: CORE-8332** TRIFIL now considers surfaces where the elevation value is outside the block model Z range.
- **Case: CORE-8321** An issue causing the capping surface of a block model cell to be displayed, even when clipping is disabled, has been resolved.
- **Case: CORE-8319** An issue causing clipped block model cells to render incorrectly has been resolved.
- **Case: CORE-8297** Use existing loaded drillhole component data to build or rebuild drillholes using the Drillhole Importer.
- **Case: CORE-8278** A component misregistration problem that could cause Strat3D to malfunction after installing this product, has been resolved.
- **Case: CORE-8226** Changing section positions with the move-plane-forward and move-plane-backward commands is now quicker.
- **Case: CORE-8209** The **extrude-strings** command now lets you define a field for existing azimuth and dip extrusion values.
- **Case: CORE-8197** You can now paste copied items into the Project Data control bar, and can access project file addition functions.
- **Case: CORE-8181** Exporting Plots window data to CAD formats has been completely overhauled to provide support for a wider range of data configurations and to improve accuracy for all exported data types.
- **Case: CORE-8173** During volumetric block modelling, TRIFIL's @RESOL (Z Resolution) parameter is now available when using wireframe dip to determine maximum subcelling.
- **Case: CORE-8122** You can now apply a quick fix to multiple selected validation results in **Drillhole Importer**.
- **Case: CORE-8112** Drillhole Importer no longer creates files with multiple (drillhole) suffixes after reloading data.
- **Case: CORE-8109** Delete custom **Drillhole Importer** data sources using the data sources list.
- **Case: CORE-8101** Drillhole Importer now imports data as a background task after launching and, if a data source is missing, this is highlighted.
- **Case: CORE-8097** Drillhole Importer now automatically detects Leapfrog system field names, saving time when setting up an import scenario.
- **Case: CORE-8096** In the Drillhole Importer, the **Mapping Type** now appears in bold for clarity.
- **Case: CORE-8095** Include or exclude multiple fields at once in Drillhole Importer using new context menu options.



- **Case: CORE-8094** Keyboard navigations shortcuts (SHIFT+Tab, SHIFT+Enter) have been added to Drillhole Importer table grids.
- **Case: CORE-7925** When exporting vector data, each overlay now contributes to a unique CAD layer.
- **Case: CORE-7789** An "Open containing folder" option has been added to the Project Data control bar context menu.
- **Case: CORE-7936** A new command - **switch-drillhole-points-traces** - toggles between pixel line and points drillhole rendering modes.
- **Case: CORE-7934** Automatically validate the adherence of collar positions to a specified surface topography file, reporting errors above a specified distance threshold.
- **Case: CORE-7933** Right-click a file in the **Drillhole Importer** to see a preview of the data table in the Tables window in your application.
- **Case: CORE-7931** Drillholes can now be rendered as points.
- **Case: CORE-7924** The **BOOLEAN** process now supports a @USENORM parameter to determine if wireframe triangle normals are used to determine the inside/outside of input data.
- **Case: CORE-7892** REBLOCK now cleans up temporary files during processing.
- **Case: CORE-7884** Re-import all drillhole component tables to absorb the latest source file changes using a new Re-import button on the Import tab.
- **Case: CORE-7881** Previously committed drillhole data fixes can now be reapplied automatically when revalidating as part of the **Drillhole Importer** process.
- **Case: CORE-7801** end-link-selected-strings is now supported by the Maximum Segment Length project setting.
- **Case: CORE-7759** A new process - **RANDOM** - generates random numbers, superseding the legacy MONACO process.
- **Case: CORE-7671** The auto alignment option when defining a new 3D section now also applies to Vertical and Perpendicular section types.
- **Case: CORE-7612** During point cloud reconstruction, you are now prompted to save recent changes when closing the command.
- **Case: CORE-7611** Point reconstruction scenarios are now automatically enabled after creation.
- **Case: CORE-7588** You can now define custom coordinate transformations using the transform-coordinates command.

- **Case: CORE-7558** You can now automatically align the view when swapping between preset section orientations (N-S, E-W etc.)
- **Case: CORE-7557** Optionally, orient the 3D view direction after defining a one-point section.
- **Case: CORE-7391** A new command - **insert-segment-intersect** - lets you add a vertex to a string segment where it intersects the projected intersection of another segment.
- **Case: CORE-7266** A new command - **simplify-string** - provides an alternative string conditioning approach to condition-string.
- **Case: CORE-6886** A consistent **Enter Translation Distance** screen is displayed when translating point, string or wireframe data.
- **Case: CORE-6767** Categorical and grade shell modelling surface snapping routines have been improved where the output mesh contained near-coincident points.
- **Case: CORE-6536** Probability plots can now be displayed as either lines or points.
- **Case: CORE-6389** A new command - **assign-attributes-by-selection-order** - lets you attribute string, drillhole or wireframe data based on data selection or string direction order.
- **Case: CORE-6369** A new process - **TRANSCO** - transforms data coordinates in physical files between Well Known Transformation (WKT) codes.
- **Case: CORE-5683** Downhole images can now be in any industry-standard image format.
- **Case: CORE-4144** Change the 3D window selection colour to whatever you like, using the new **Options >> 3D >> General >> Selection** options.
- **Case: CORE-2849** You can now control the scale and rotation of downhole images in 3D and Log views.
- **Case: CORE-543** A new command - **create-planar-rectangle** - lets you define a rectangle by height, width, azimuth and anchor point, then position it in a 3D window interactively.

## User Experience

- **Case: STUDIO-7144** The **Unfold Wizard** now inherits the current visual theme.
- **Case: STUDIO-7133** The **Unfold Wizard** is now a fixed size.

- **Case: STUDIO-7116** The layout and appearance of implicit modelling screens has been improved.
- **Case: STUDIO-7115** Sample intercept usage and direction options have been renamed in the Vein and Contact Surface tasks.
- **Case: STUDIO-7090** **create-planar-rectangle** has been added to the Digitize ribbon.
- **Case: STUDIO-7089** The **RANDOM** process now replaces MONACO on the **Sample Analysis** ribbon.
- **Case: STUDIO-7087** **assign-attributes-by-selection-order** is available on the **Data** and **Digitize** ribbons.
- **Case: STUDIO-7044** **merge-wf-to-object** is now accessible using the Explicit ribbon.
- **Case: STUDIO-7043** **Clip to Perimeter** now replaces legacy string clipping commands on the Digitize ribbon. Consult your help file for more details.
- **Case: STUDIO-7040** The **MineScape Block Model Converter** utility is now available on the Data ribbon (External menu).
- **Case: STUDIO-6943** Various commands in the data **Unload** menu have been renamed to make the distinction between unloading and deleting clearer.
- **Case: STUDIO-6893** Studio RM Start page resources have been updated to reflect the latest company branding.
- **Case: STUDIO-6875** Vein and Contact Surfaces commands now have improved tooltips.
- **Case: CORE-8108** Redundant drive linking settings have been removed from the **Project Settings** screen.
- **Case: CORE-8008** The default Customization window watermark logo has been updated.
- **Case: CORE-7944** Options for managing loaded ellipsoid data have been added to the Data ribbon menus.
- **Case: CORE-7939** The **REBLOCK** ribbon tooltip has been modified to make it distinct from the REGMOD process.
- **Case: CORE-7865** Screen text has been added to suggest using <CTRL> when using the assign-attributes-by-selection-order command.
- **Case: CORE-7785** The **Data Unload** screen now lists objects alphabetically.
- **Case: CORE-7783** The **Data Unload** screen is now resizable.
- **Case: CORE-7342** You can now right-click a visible 3D object to set it as the current object.

- **Case: CORE-6891** The Studio RM splash screen has been updated to match the latest corporate branding.
- **Case: CORE-6830** Small icons now appear when the Studio application frame is shrunk.
- **Case: CORE-5851** Installer graphics have been updated following corporate rebranding.

## Automation

- **Case: CORE-8292** The Studio Script Helper's **varsave()** method now produces a file that interacts with VARLOAD as expected.
- **Case: CORE-7782** The Grid DTMs command is now scriptable.

## Utilities & Supporting Services

- **Case: CORE-8328** When importing MineScape Stratmodel data, you can now choose if overlapping seam data is consolidated or left overlapping.
- **Case: CORE-8233** User logging in **License Manager** now records the status of all licenses on the host system at the start of data recording.
- **Case: CORE-7937** A MineScape Block Model Generator utility can be accessed with a new minescape-to-blockmodel command.
- **Case: CORE-7689** When importing a Minescape Prism model, multiple layers can be selected, and you can also create a SEAM column during import.
- **Case: CORE-4876** You can now load and import data in Deswik Unified Format (.duf). The new driver option appears on the Data Import screen, accessed via the Data ribbon.

## Documentation & eLearning

- **Case: CORE-8623** Documentation for the translate-string, translate-point, translate-string-opt and translate-wireframe commands has been extended.
- **Case: CORE-8007** Help files have been updated to reflect the latest corporate branding.
- **Case: CORE-3931** More information on IF-ELSE-END loops in **EXTRA** has been added to the help file.
- **Case: CORE-3574** More examples have been added to the **EXTRA** help file.



## Additional Defect Fixes

- **Case: STUDIO-7163 DAELLIPS** no longer fails if ANGLE2 is empty.
- **Case: STUDIO-7131** If generating an **Optional Output Parameter File** via the **Unfold wizard**, all options other than PLAN are now correctly defined as PLANE=1. If PLAN is chosen, the parameter file contains PLANE=2.
- **Case: STUDIO-7112** 3D data generated by the **Unfold wizard** are now correctly updated when re-unfolding is performed.
- **Case: STUDIO-7098** Introductory information relating to **Uniform Conditioning** has been corrected.
- **Case: STUDIO-7095** The **Optional Output Parameter File** is now generated when the **Unfold Wizard** is run.
- **Case: STUDIO-7070** An unexpected instance of samples within a soft boundary being used in estimation on a hard boundary zone has been resolved.
- **Case: STUDIO-6998** The **SAMPOUT** toggle is now restored correctly in the **Advanced Estimation console**.
- **Case: STUDIO-6956** In **Advanced Estimation**, a check has been added to see if variables are equally sampled at the same place. If not, estimations are not merged to avoid incorrect results.
- **Case: STUDIO-6705** An issue causing unexpected variogram map plane rotations has been resolved.
- **Case: STUDIO-4164** Documentation for the **set-face-angle** command is now available.
- **Case: STUDIO-4106** In the **Unfold Wizard**, you can no longer proceed with unfolding if sample coordinates are required and not defined.
- **Case: STUDIO-2651** The **Unfold Wizard** now displays a more useful message to warn of malformed wireframes.
- **Case: CORE-8727** The application no longer halts unexpectedly if a macro containing more than 10 macros is right-clicked in the **Project Files control bar**.
- **Case: CORE-8693** If **EXTRA** is called from a macro, a missing **GO** instruction no longer prevents the process from completing.
- **Case: CORE-8581** An issue causing incomplete desurveying of imported holes in **Drillhole Importer** has been resolved.
- **Case: CORE-8580** Retrieval criteria can now be used in the **STATCOM** process.
- **Case: CORE-8565 Drillhole Importer** now unlocks Excel files after import as expected.

- **Case: CORE-8484** Start pages now show the correct modified data for projects. Previously, some dates were truncated.
- **Case: CORE-8450** Editing scenario settings in **Drillhole Importer** now triggers a project save prompt when closing the project.
- **Case: CORE-8448** The **DAELLIPS** field label for **ANGLE3** is now correct.
- **Case: CORE-8404** An issue causing system instability when cutting multiple file references to the clipboard via Project Files, has been resolved.
- **Case: CORE-8352** An issue causing the system to halt when reimporting Fusion data has been resolved.
- **Case: CORE-8285** An issue preventing the import of ODBC-compliant data using the Drillhole Importer has been resolved.
- **Case: CORE-8280** An issue causing the restoration of form values to render process screens incorrectly has been resolved.
- **Case: CORE-8201 Reload All** now reloads all data types as expected.
- **Case: CORE-8184** An issue preventing **Edit Attributes** from working correctly with alphanumeric fields has been resolved.
- **Case: CORE-8126** When assigning attributes via perimeters, you can now group attributes using the system SURFACE attribute.
- **Case: CORE-8068** Unexpected parameters have been removed from the wireframe-section and wireframe-plane-project command interfaces.
- **Case: CORE-8042** If **BHID** values were numeric and larger than seven significant figures DESURV could fail. This is now resolved.
- **Case: CORE-8041** A data-specific issue causing **HOLES3D** to process indefinitely has been resolved.
- **Case: CORE-7989** DXF import now imports frozen layers by default, and an issue causing duplicate points has been resolved.
- **Case: CORE-7982 Transform Coordinates** no longer creates empty output if the input is in single-precision format.
- **Case: CORE-7971** An issue causing the Back, Finish and Cancel buttons to appear incorrectly in the **New Legend** wizard, after resizing it, has been resolved.
- **Case: CORE-7970** New Legend bins now have correctly assigned values when the distribution is logarithmic.
- **Case: CORE-7949** An error in the write-all-strings help file has been corrected.
- **Case: CORE-7891** An issue preventing the full import of AutoCAD data has been resolved.

- **Case: CORE-7859** Redundant data import items in the 3D window context menu have been removed.
- **Case: CORE-7837** An issue causing processes to fail, if long path names were used in conjunction with **!LOCDBOFF**, has been resolved.
- **Case: CORE-7826** Block model hulls are now displayed correctly in 3D windows, in relation to the current clipping settings.
- **Case: CORE-7733** User feedback when setting up default grid templates has been improved.
- **Case: CORE-7666** Pasting text into the **Command** toolbar no longer duplicates the clipboard contents.
- **Case: CORE-7594** **Contact Surface** task list boxes are now sorted correctly.
- **Case: CORE-7524** An issue causing an incorrect string segment to be removed, after using the Insert Line command, has been resolved.
- **Case: CORE-7514** An issue causing clipboard items to be pasted twice into the command line has been resolved.
- **Case: CORE-7487** EXTRA's calculation of inverse trigonometric function "asin" while there is a mathematical expression which contains columns inside it, is now as expected.
- **Case: CORE-7441** An issue causing a Micromine block model to fail to load has been resolved.
- **Case: CORE-7248** An issue causing unexpected value distributions in histogram and log histogram data when customizing the X axis has been resolved.
- **Case: CORE-7004** An issue causing **Outliers** options to become unresponsive, on the Search Volume setup of **Advanced Estimation**, has been resolved.
- **Case: CORE-6988** The **Create Ramp String** command no longer creates an unexpected additional segment when the gradient is greater than 0.
- **Case: CORE-6827** An issue causing a DGN mesh to import has been resolved.
- **Case: CORE-6813** You can now define a segment length below 1 when using the **create-ramp-string** command.
- **Case: CORE-6806** Create Vein Surfaces list values are no longer affected by inadvertent mouse wheel scrolling.
- **Case: CORE-6690** An issue causing misaligned texturing of an imported .obj file has been resolved.

- **Case: CORE-6410** An issue causing coincident wireframe data to be displayed contrary to an EPS schedule during animation playback has been resolved.
- **Case: CORE-5654** An issue causing a Microstation DGN wireframe to import has been resolved.
- **Case: CORE-5460** When exporting plot data to a CAD format, precision issues no longer occur when world coordinates are disabled.
- **Case: CORE-3966** Exporting Faces and polylines via the CAD driver no longer export unwanted point data.
- **Case: CORE-2248** Macro names in a .mac file now appear correctly via the Project Files control bar.
- **Case: CORE-1498** Exporting to a vector format no longer includes data outside the original view boundaries.





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